

JAYPEE UNIVERSITY ANOOPSHAHAR

Faculty of Sciences



Course Structure

B.Sc. (Physical Sciences)

As per NEP 2020

Based on document on "Curriculum and credit framework for undergraduate programs" released by University Grants Commission on December 7, 2022.

Four Year Undergraduate Programme (FYUP) course structure of UGC aligned with Uttar Pradesh NEP 2020 UG course structure 2023

Academic Batch: 2025-2028/29

JAYPEE UNIVERSITY ANOOPSHAHR

3 Year: B.Sc in Physical Sciences with Minor in Physics/Chemistry/Math

4 Year: B.Sc in Honors/Honors with Research in Physics/Chemistry/Math

| Semester I | | | | | | | | | | | | |
|-------------------|---------------------|------------------------------|-----------|----------|----------|--------------|----------------|----------------------------|-------------------------|--------------------------|--------------------------------|----------------|
| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks |
| 1 | 25H11MA111 | Calculus | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | |
| 2 | 25H11PH111 | Mechanics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | |
| 3 | 25H17PH171 | Physics Lab 1 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 4 | 25H11CH111 | Fundamentals of Chemistry | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | |
| 5 | 25H17CH171 | Quantitative Analysis | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 6 | 25H11SS114 | Constitution and Development | 3 | 1 | 0 | 4 | 4 | Core | VAC | Co-Curricular courses | Department of Social Sciences | |
| Total | | | 12 | 2 | 4 | 18 | 16 | | | | | |

VAC: Value Added Course

| Semester II | | | | | | | | | | | | | |
|-------------|--------------|---|-----------|----------|----------|-----------|-----------|---------------------|------------------|-------------------|------------------------------------|---------|--|
| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks | |
| 1 | 25H11MA211 | Matrices and Differential Equations | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | | |
| 2 | 25H11PH211 | Waves and Optics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | | |
| 3 | 25H17PH271 | Physics Lab 2 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | | |
| 4 | 25H11CH211 | Bioorganic and Medicinal Chemistry | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | | |
| 5 | 25H11SS214 | Indian Knowledge System | 3 | 0 | 0 | 3 | 3 | Core | MDC | MDC | Department of Arts | | |
| 6 | 25H11CA111 | Computer Fundamentals and Programming | 2 | 0 | 0 | 2 | 2 | Core | SEC | SEC | Department of Computer Application | | |
| 7 | 25H17CA171 | Computer Fundamentals and Programming-Lab | 0 | 0 | 2 | 2 | 1 | Core | SEC | Vocational Course | | | |
| 8 | 25H11HS216 | Professional Communication | 3 | 1 | 0 | 4 | 4 | Core | AEC | AEC | Department of Arts | | |
| 9 | 25H11LS211 | Environmental Sciences | 3 | 0 | 0 | 3 | 3 | Core | VAC | VAC | Department of Life Sciences | | |
| | | Total | 20 | 2 | 4 | 26 | 24 | | | | | | |

SEC: Skill Enhancement Course, VAC: Value Added Course, AEC: Ability Enhancement Course; MDC: Multi-Disciplinary Course.

As per Uttar Pradesh NEP 2020 UG-PG Course structure 2023, co-curricular course grades will be included in the calculation of a student's CGPA.

Students on exit shall be awarded 'Undergraduate Certificate in Physical Sciences' after securing the requisite 40 credits in Semesters I and II (Along with Summer Internship of 4 Credits).

| Semester III | | | | | | | | | | | | | |
|--------------|--------------|--|----------|----------|-----------|-----------|---------|---------------------|------------------|-------------------|-------------------------|--------------------------|--|
| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks | |
| 1. | 25H11MA311 | Numerical Analysis and Operations Research | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Mathematics | | |
| 2. | 25H17MA371 | Numerical Analysis Lab | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | | |
| 3. | 25H11PH311 | Electromagnetic theory | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | | |
| 4. | 25H17PH371 | Physics Lab 3 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | | |
| 5. | 25H11CH311 | Chemical Dynamics & Coordination Chemistry | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | | |
| 6. | 25H17CH371 | Biophysical Analysis | 0 | 0 | 4 | 4 | 2 | Core | Major | Major | | | |
| 7. | 25H11MA312 | Fundamentals of Statistics | 3 | 0 | 0 | 3 | 3 | Core | MDC | MDC | Dept. of Mathematics | Department of Management | |
| 8. | 25H11MT416 | Digital Marketing | 3 | 0 | 0 | 3 | 3 | Core | SEC | SEC | | | |
| 9. | 25H11MT417 | Skills for Employability | 3 | 1 | 0 | 4 | 4 | Core | AEC | AEC | | | |
| Total | | 18 | 1 | 8 | 27 | 23 | | | | | | | |

SEC: Skill Enhancement Course, AEC: Ability Enhancement Course, MDC: Multi-Disciplinary Course

| Semester IV | | | | | | | | | | | | | |
|--------------|--------------|---|-----------|----------|----------|-----------|-----------|---------------------|------------------|-------------------|--------------------------|---------|--|
| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks | |
| 1. | 25H11MA411 | Multivariate Calculus | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | | |
| 2. | 25H11PH411 | Thermal Physics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | | |
| 3. | 25H17PH471 | Physics Lab 4 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | | |
| 4. | 25H11CH411 | Quantum Chemistry and Basic Instrumentation | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | | |
| 5. | 25H17CH471 | Instrumental Analysis | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | | |
| 6. | 25H11MA412 | Group Theory | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | Dept. of Mathematics | | |
| 7. | 25H11CH412 | Organic Chemistry-A | | | | | | | | | Dept. of Chemistry | | |
| 8. | 25H11PH412 | Mathematical Physics | | | | | | | | | Dept. of Physics | | |
| 9. | 25H11MT312 | Intellectual Property Rights | 3 | 0 | 0 | 3 | 3 | Core | MDC | MDC | Department of Management | | |
| 10. | 25H11CO311 | Finance for everyone | 3 | 0 | 0 | 3 | 3 | Core | SEC | SEC | Department of Commerce | | |
| Total | | | 19 | 1 | 4 | 24 | 22 | | | | | | |

SEC: Skill Enhancement Course, MDC: Multi-Disciplinary Course.

Total credits assigned to semester IV are 22

(*) Students are required to select one minor from the following options: Physics, Chemistry, or Mathematics.

Students on exit shall be awarded '*Undergraduate Diploma in Physical Sciences*' after securing the requisite 85 credits on completion semester IV (Along with Summer Internship of 4 Credits).

| Semester V | | | | | | | | | | | | |
|--------------|--------------|--|----|---|----|-------|---------|---------------------|------------------|-------------------|-------------------------|--------------------|
| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks |
| 1 | 25H11MA511 | Probability and Statistics | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | Dept. of Physics |
| 2 | 25H11PH511 | Quantum Mechanics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | Dept. of Physics |
| 3 | 25H17PH571 | Physics Lab 5 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 4 | 25H11CH511 | Chemical Energetics and Radiochemistry | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | Dept. of Chemistry |
| 5 | 25H17CH571 | Qualitative Analysis | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 6 | 25H19PS591 | Summer Internship | 0 | 0 | 6 | 6 | 3 | Core | Elective | Elective | | |
| 7 | 25H11MA512 | Real Analysis | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | Dept. of Math | |
| 8 | 25H11MA513 | Linear Algebra | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| OR | | | | | | | | | | | | |
| 9 | 25H11CH512 | Rearrangements and Chemistry of Group Elements | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | Dept. of Chemistry | |
| 10 | 25H11CH513 | Organic Chemistry-B | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| OR | | | | | | | | | | | | |
| 11 | 25H11PH512 | Basic Electronics & Analog circuits | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | Dept. of Physics | |
| 12 | 25H11PH513 | Solid State Physics | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| Total | | | 17 | 1 | 10 | 28 | 23 | | | | | |

Total credits assigned to semester V are 23

(*) Students are required to select two minor from the following options: Physics, Chemistry, or Mathematics.

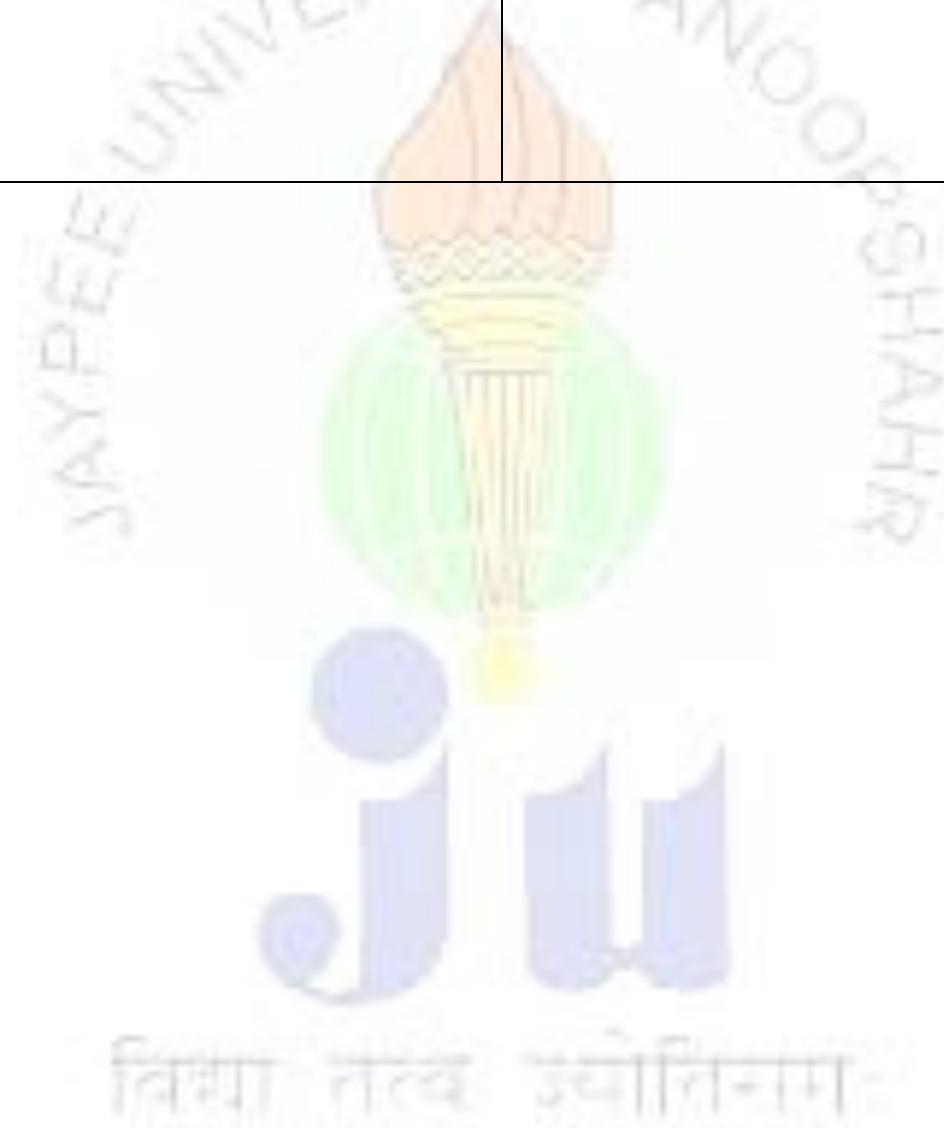
| Semester VI | | | | | | | | | | | | | |
|--------------|--------------|---|----|---|---|-------|---------|---------------------|------------------|-------------------|-------------------------|---------|--|
| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks | |
| 1 | 25H11MA611 | Complex Analysis | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | Dept. of Math | | |
| 2 | 25H11MA612 | Riemann Integral | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | | |
| 3 | 25H11MA613 | Partial Differential Equations and Applications | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | | |
| | | | 12 | 0 | 0 | 12 | 12 | | | | | | |
| OR | | | | | | | | | | | | | |
| 1 | 25H11CH611 | Organic Chemistry-C | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | Dept. of Chemistry | | |
| 2 | 25H17CH671 | Quantitative Analysis | 0 | 0 | 2 | 2 | 1 | Elective | Minor | Minor | | | |
| 3 | 25H11CH612 | Equilibrium and States of Matter | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | | |
| 4 | 25H11CH613 | Polymer, Surface and Bioinorganic Chemistry | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | | |
| | | | 11 | 0 | 2 | 13 | 12 | | | | | | |
| OR | | | | | | | | | | | | | |
| 1 | 25H11PH611 | Statistical Physics with programming | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | Dept. of Physics | | |
| 2 | 25H11PH612 | Nuclear and Particle Physics | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | | | |
| 3 | 25H11PH613 | Digital Electronics | 2 | 0 | 0 | 2 | 2 | Elective | Minor | Minor | | | |
| 4 | 25H11PH614 | Modern Physics | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | | | |
| 5 | 25H17PH671 | Physics Lab 6 | 0 | 0 | 2 | 2 | 1 | Elective | Minor | Minor | | | |
| Total | | | 11 | 0 | 2 | 13 | 12 | | | | | | |

Total credits assigned to semester VI are 12

Students are required to select three minor from the following options: Physics, Chemistry, or Mathematics.

Students have to earn a total of 120 credits for award of *B.Sc. Degree in Physical Sciences with a Minor in Physics/Chemistry/Mathematics*.

| HOD | Faculty In-charge | Dean (Academics) | Vice-Chancellor |
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Semester VII

| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks |
|--------------|--------------|----------------------|-----------|----------|----------|-----------|-----------|---------------------|------------------|-------------------|-------------------------|---------|
| 1 | 25H11MA711 | Metric Space | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | |
| 2 | 25H11MA712 | Number Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 3 | 25H11MA713 | Graph Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11MA714 | Ring Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11MA715 | Discrete Mathematics | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| 6 | 25H19MA791 | Research Project 1 | 0 | 0 | 8 | 4 | 4 | Research Project | Research Project | Research Project | | |
| Total | | | 19 | 1 | 8 | 24 | 24 | | | | | |

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|--------------|------------|---|-----------|----------|-----------|-----------|-----------|----------|------------------|------------------|--------------------|--|
| 1 | 25H11CH711 | Molecular Symmetry and Molecular Vibrations | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | |
| 2 | 25H17CH771 | Chemistry Lab A | 0 | 0 | 4 | 4 | 2 | Core | Major | Major | | |
| 3 | 25H11CH712 | Analytical Chemistry | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11CH713 | Main Group Elements | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11CH714 | Organic Reaction Mechanism | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| 6 | 25H11CH715 | Chemical Techniques | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 7 | 25H19CH791 | Research Project I | 0 | 0 | 8 | 8 | 4 | Core | Research Project | Research Project | | |
| Total | | | 18 | 0 | 12 | 30 | 24 | | | | | |

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|---|------------|----------------------------|---|---|---|---|---|------|-------|-------|------------------|--|
| 1 | 25H11PH711 | Electronic Instrumentation | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | |
| 2 | 25H17PH771 | Physics Lab 7 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 3 | 25H11PH712 | Material Science | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |

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|--------------|------------|--|-----------|----------|-----------|-----------|-----------|----------|------------------|------------------|--|--|
| 4 | 25H11PH713 | Laser and Optical Fiber Communications | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 5 | 25H11PH714 | Atomic and Molecular Physics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 6 | 25H11PH715 | Computational Physics | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | | |
| 7 | 25H11PH716 | Astronomy and Artificial Intelligence | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | | |
| 8 | 25H19PH791 | Research Project I | 0 | 0 | 8 | 8 | 4 | Core | Research Project | Research Project | | |
| Total | | | 19 | 0 | 10 | 29 | 24 | | | | | |

Total credits assigned to semester VII are 24.

Semester VIII

| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | University Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks | | |
|--------------|--------------|---|-----------|----------|-----------|-----------|-----------|---------------------|------------------|-------------------|-------------------------|---------|--|--|
| 1 | 25H11MA811 | Special functions | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | | | |
| 2 | 25H11MA812 | Measure Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | | | |
| 3 | 25H11MA813 | Functional Analysis | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | | | |
| 4 | 25H11MA814 | Variational Analysis and Fixed Point Theory | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | | | |
| 5 | 25H19MA891 | Research Project II | 0 | 0 | 16 | 16 | 8 | Core | Research Project | Research Project | | | | |
| Total | | | 15 | 1 | 16 | 32 | 24 | | | | | | | |
| OR | | | | | | | | | | | | | | |
| 1 | 25H11CH811 | Thermodynamics and Electrochemistry | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | | | |
| 2 | 25H17CH871 | Chemistry Lab B | 0 | 0 | 4 | 4 | 2 | Core | Major | Major | | | | |
| 3 | 25H11CH812 | Natural Products | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | | | |
| 4 | 25H11CH813 | Transition Elements | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | | | |
| 5 | 25H11CH814 | Chemistry of Analgesics and Antipyretics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | | | |
| 6 | 25H19CH891 | Research Project II | 0 | 0 | 16 | 16 | 8 | Core | Research Project | Research Project | | | | |
| Total | | | 14 | 0 | 20 | 34 | 24 | | | | | | | |
| OR | | | | | | | | | | | | | | |
| 1 | 25H11PH811 | Atmospheric Physics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | | | |
| 2 | 25H17PH871 | Physics Lab 8 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | | | |
| 3 | 25H11PH812 | Machine Learning for Physics | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | | | |
| 4 | 25H11PH813 | Nanotechnology | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | | | |

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| 5 | 25H11PH814 | General Theory of relativity and Cosmology | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| 6 | 25H19PH891 | Research Project II | 0 | 0 | 16 | 16 | 8 | Core | Research Project | Research Project | | |
| Total | | | 15 | 0 | 18 | 33 | 24 | | | | | |

Total credits assigned to semester VIII are 24

As per Uttar Pradesh NEP 2020 UG-PG Course structure 2023, research project course grades will be included in the calculation of a student's CGPA.

Students have to earn a total of 168 credits on for award of “*B.Sc. (Honours/Honours with Research) in Physics/Chemistry/Mathematics*”

| HOD | Faculty In-charge | Dean (Academics) | Vice-Chancellor |
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Semester VII

| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | Univ. Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks |
|--------------|--------------|----------------------|-----------|----------|----------|-----------|-----------|----------------|------------------|-------------------|-------------------------|---------|
| 1 | 25H11MA711 | Metric Space | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | |
| 2 | 25H11MA712 | Number Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 3 | 25H11MA713 | Graph Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11MA714 | Ring Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11MA715 | Discrete Mathematics | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| Total | | | 19 | 1 | 0 | 20 | 20 | | | | | |

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|--------------|------------|--|-----------|----------|----------|-----------|-----------|----------|-------|-------|------------------|--|
| 1 | 25H11PH711 | Electronic Instrumentation | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | |
| 2 | 25H17PH771 | Physics Lab 7 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 3 | 25H11PH712 | Material Science | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11PH713 | Laser and Optical Fiber Communications | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 5 | 25H11PH714 | Atomic and Molecular Physics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 6 | 25H11PH715 | Computational Physics | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | | |
| 7 | 25H11PH716 | Astronomy and Artificial Intelligence | 3 | 0 | 0 | 3 | 3 | Elective | Minor | Minor | | |
| Total | | | 19 | 0 | 2 | 21 | 20 | | | | | |

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|---|------------|---|---|---|---|---|---|----------|-------|-------|-------------------------|--|
| 1 | 25H11CH711 | Molecular Symmetry and Molecular Vibrations | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Department of Chemistry | |
| 2 | 25H17CH771 | Chemistry Lab A | 0 | 0 | 4 | 4 | 2 | Core | Major | Major | | |
| 3 | 25H11CH712 | Analytical Chemistry | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11CH713 | Main Group Elements | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11CH714 | Organic Reaction Mechanism | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |

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| 6 | 25H11CH715 | Chemical Techniques | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| | | Total | 18 | 0 | 4 | 22 | 20 | | | | | |

Total credits assigned to semester VII are 20



Semester VIII

| S. No. | Subject Code | Course Name | L | T | P | Total | Credits | Univ. Category | UGC/NEP Category | UP Govt. Category | Course offered by Dept. | Remarks |
|--------------|--------------|---|----------|----------|-----------|-----------|---------|----------------|------------------|-------------------|-------------------------|---------|
| 1 | 25H11MA811 | Special functions | 3 | 1 | 0 | 4 | 4 | Core | Major | Major | Dept. of Math | |
| 2 | 25H11MA812 | Measure Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 3 | 25H11MA813 | Functional Analysis | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11MA814 | Variational Analysis and Fixed Point Theory | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11MA815 | Differential Geometry | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| Total | | 19 | 1 | 0 | 20 | 20 | | | | | | |

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|--------------|------------|--|----------|----------|-----------|-----------|---|----------|-------|-------|--------------------|--|
| 1 | 25H11CH811 | Thermodynamics and Electrochemistry | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Chemistry | |
| 2 | 25H17CH871 | Chemistry Lab B | 0 | 0 | 4 | 4 | 2 | Core | Major | Major | | |
| 3 | 25H11CH812 | Natural Products | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 4 | 25H11CH813 | Transition Elements | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11CH814 | Chemistry of Analgesics and Antipyretics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 6 | 25H11CH815 | Quantum Chemistry | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| Total | | 18 | 0 | 4 | 22 | 20 | | | | | | |

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|---|------------|------------------------------|---|---|---|---|---|------|-------|-------|------------------|--|
| 1 | 25H11PH811 | Atmospheric Physics | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | Dept. of Physics | |
| 2 | 25H17PH871 | Physics Lab 8 | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| 3 | 25H11PH812 | Machine Learning for Physics | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |

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|--------------|------------|--|-----------|----------|----------|-----------|-----------|----------|-------|-------|--|--|
| 4 | 25H11PH813 | Nanotechnology | 4 | 0 | 0 | 4 | 4 | Core | Major | Major | | |
| 5 | 25H11PH814 | General theory of relativity and Cosmology | 4 | 0 | 0 | 4 | 4 | Elective | Minor | Minor | | |
| 6 | 25H11PH815 | Sensors and IOT | 3 | 0 | 0 | 3 | 3 | Core | Major | Major | | |
| 7 | 25H17PH872 | Sensors and IOT Lab | 0 | 0 | 2 | 2 | 1 | Core | Major | Major | | |
| Total | | | 18 | 0 | 4 | 22 | 20 | | | | | |

Total credits assigned to semester VIII are 20

Students have to earn a total of 160 credits on for award of “B.Sc. (Honours) in Physics/Chemistry/Mathematics”

| HOD | Faculty In-charge | Dean (Academics) | Vice-Chancellor |
|-----|-------------------|------------------|-----------------|
| | | | |